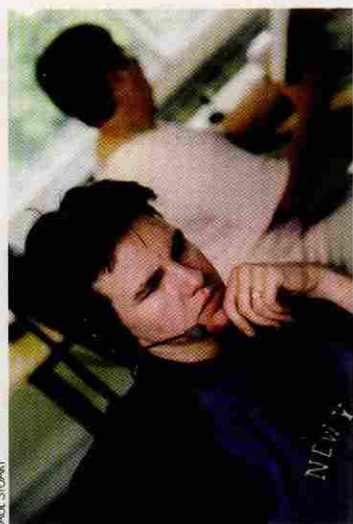


# THE NATIONAL POISONS INFORMATION SERVICE

NICK EDWARDS discusses the changes the National Poisons Information Service (NPIS) has undergone in the past five years, and the new and varied users, such as NHS Direct, now seeking advice on poisons

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The United Kingdom poisons information service for the medical profession started in 1961 in Leeds. The UK government recognised the need for a service to assist medical staff to diagnose and treat poisoned patients. The original report by the Standing Medical Advisory Committee of the Ministry of Health (1962), envisaged a service that would create a database of substance and product information and provide this to hospitals and GPs. In response to this report, poison information centres were set up in London, Edinburgh, Cardiff and Belfast in 1963. The Leeds centre continued to operate outside of the government scheme until it was incorporated and then merged with Newcastle in the 1990s.

The system, which has been operating in the UK since the 1960s, was not the first. The first poisons information service was pioneered by the American Association of Pediatrics, and opened in Chicago, in the USA, in the early 1950s (Goulding and Watkin 1965). The UK system however, was probably the first comprehensive national system. By March 1964, centres had been established in London, Edinburgh, Cardiff and Belfast, as well as the 'independent' Leeds Centre.

The UK system is different from poison centres in the United States, and in most countries in the developed world. In contrast to other services, the UK poisons information service is intended only for professional users, rather than for professionals and members of the public.

Other poisons information centres have come and gone over the years. At various times there have been centres in Manchester and Bristol as well as the existing centres incorporated into the NPIS,

at Birmingham and Newcastle. These 'regional' centres grew from the regional treatment centres recommended in the 1962 report. The loss of the Manchester and Bristol centres has left the new regionalisation rather unbalanced. The poisons information service in the UK has undergone a number of changes in the past few years. This article will outline the main changes and how they affect our users in A&E departments.

## WHY IS NPIS NOT PUBLIC ACCESS?

The UK has a comprehensive primary care system that is free at the point of use. Patients have access to medical and health advice from several services, including:

- > Their GP
- > Community pharmacist (chemist)
- > Emergency department or minor injuries unit of local hospital
- > NHS walk in centres, or
- > NHS Direct (available on 0845 46 47 in England and Wales, NHS 24 in Scotland from Spring 2002).

All of these individuals or services can contact a poisons information service on behalf of a member of the public if necessary.

## GROWTH AND DEMAND

The UK poison information service grew in response to a demand for more information and advice from, particularly, hospitals in response to the growth in the number of new drug and 'chemical' products, as well as the increase in the use of drugs as a means of suicide.

The number of enquiries to the London centre rose slowly the mid 1980s (Fig. 1), when the annual total began to rise rapidly. In the six years between 1985 and 1991 the number of enquiries doubled and then

This article has been subjected to double blind peer review



doubled again in the next six years to 1997. The reasons for this marked rise are not clear. It is a pattern, however, that has been seen in other centres around the world. In part, it is a reflection of the desire to practice defensive medicine, as well as increases in the use of drugs in suicidal attempts and the growth in the number and complexity of 'chemical' products in the home and industry. The tailing off of enquiries to the London centre in the last few years is easier to explain, see Changed Provision below.

### CHANGED PROVISION

In 1997, a plan to deal with the seemingly inexorable rise in enquiry demand was formulated, this strategy was agreed by the Department of Health and the UK Poisons Information Centres in 1998. The plan has four key elements:

- > To improve and expand the national database (TOXBASE) as the first tier or primary source of advice of the management of the poisoned patient.
- > To increase out-reach training and education materials.
- > To provide a national consultant lead voice service with trained professionals as 'front' line for the more complex or difficult enquiries.
- > To regionalise provision so that Centres can develop more local relationships with Trusts and other health professionals. As part of this, poison information centres have been assigned geographical areas based, not on NHS Regional Offices, but on academic deaneries (see Box 1).

Details of these changes are available on the Department of Health website ([www.doh.gov.uk/npis.htm](http://www.doh.gov.uk/npis.htm)).

### CHANGES IN THE USER COMMUNITY

In addition to the desire to revise the NPIS, our users have also changed. The launch of NHS Direct and the growth in minor injuries units and NHS walk-in centres has required us to consider the nature of our advice to these services, especially for NHS Direct with the telemedicine aspects being new to them and us. We continue to help with training and advice on the database development.

In many respects NHS Direct has become the public access poisons information service that the UK did not have, and certainly the growth in demand from NHS Direct to London and all UK centres would support

Box 1. The poisons information services in the UK and the areas they serve

Poison centre	Areas served
Belfast	Northern Ireland
Birmingham	The English medical deaneries of West Midlands, Trent and Oxfordshire
Cardiff	Wales and the English medical deaneries of South Western and Wessex
Edinburgh	Scotland
London	The English medical deaneries of Anglia, North Thames and South Thames
Newcastle	The English medical deaneries of Northern, Yorkshire, North Western and Mersey

From: Department of Health (2000) The National Poisons Information Service – New arrangements for provision of information [www.doh.gov.uk/npis.htm](http://www.doh.gov.uk/npis.htm)

this; nationally the proportion of enquiries from NHS Direct to poison information services is about 15 per cent and growing.

### TOXBASE

Although this service was started in 1983, its use remained at a low level until the end of 1999 when TOXBASE ([www.spib.axl.co.uk](http://www.spib.axl.co.uk)) was made available via the Internet; it is no longer available in its original Teletext version. TOXBASE is available to all NHS medical professionals free of charge (except for telephone charges where appropriate). The usage has grown quickly over the last few years, as has the number of registered users, from 600 to 1500 in the period from before Internet availability to May 2000 (Bateman *et al* 2002). For further information on TOXBASE contact the Edinburgh centre on 0131 536 2298.

Although TOXBASE looks very different from its original appearance, the aim and content has remained the same. The object is to provide users with straightforward and clear information on, and recommendations for treatment of, a comprehensive range of poisons. The origins of the data were the original monographs written primarily by staff at the London centre since the start of the service in 1963. Each poisons monograph gives information on the following:

- > Type of substance
- > Toxicity, including case histories
- > Features of poisoning
- > Treatments and monitoring
- > References.



**BOX 2. Information available through TOXBASE ([www.spib.axl.co.uk](http://www.spib.axl.co.uk))**

Poisons information	Toxicity, features and management of poisoning with over 14,000 substances and products
Antidote information	Doses, adverse features and sources of antidotes
Battery codes	Codes and ingredients of button batteries
Decontamination	Information on gut, skin and eye decontamination
Deliberate release of toxic chemicals	Information sheets for doctors, public health physicians and the public for 60 chemicals
Emergency phone numbers	NPIS, teratology, drugs in breast milk and other numbers
Help	Help on using TOXBASE and printing entries
Household chemicals	Toxicity, features and management with common types of household products
Hyperbaric facilities	Contact details for UK hyperbaric chambers
Laboratory services	Availability of assays at selected centres
New this month	New and updated products on TOXBASE, month by month, toxicology courses, meetings and study days
Paediatric information	General information on managing poisoned children
References	Recent toxicology references to the medical literature
Slang terms	Slang names for drugs of abuse and terms
Snakes	List of non-venomous snakes, management of poisoning with non-venomous snakes and unknown snakes, antivenoms and snakebite experts
Substances of low toxicity	Lists of household products, pharmaceuticals, plants and other garden items generally considered to be of low toxicity
Teratology	Information on exposure to drugs and chemicals during pregnancy and managing medical problems in pregnancy

The Internet version allows the use of hyperlinks and other navigation aids. In addition to the monographs there are useful lists of other services, slang terms, latest news, etc. See Box 2 for a list of the other useful information available through TOXBASE.

**VOICE SERVICE**

In England, the four services, Cardiff, Birmingham, Newcastle and London, have moved towards the consultant led, specialist delivered model envisioned in the 1997

report. For London this has meant the formalising of a situation that existed since 1977 when science graduates were first employed to provide the 24-hour service. In London the staff dealing with enquiries are specialists in poisons information (SPIs), specialist registrars or locum registrars and consultant physicians. Elsewhere in the UK, in addition to these scientific and medical staff, pharmacists and specially training nursing staff are used within the rosters.

Specialists in poisons information are graduate scientists who have had training in clinical toxicology. The registrars are often medical physicians or clinical pharmacologists, although they may be A&E and paediatric staff as well. The Consultants currently in post are physicians, clinical pharmacologists or anaesthetists.

In the past two years we have begun to voice record our emergency enquiries as a training and audit tool, as well as enabling us to provide transcripts in case of complaints. Other NPIS Centres also record their enquiries for the same reasons. This is for the protection of our staff and our users. At the London centre telephone enquiries have historically been logged on a specially designed call report form, which is then entered into an enquiry database. Currently, the database holds information about 1.5 million enquiries. This database provides valuable information about the epidemiology of poisoning.

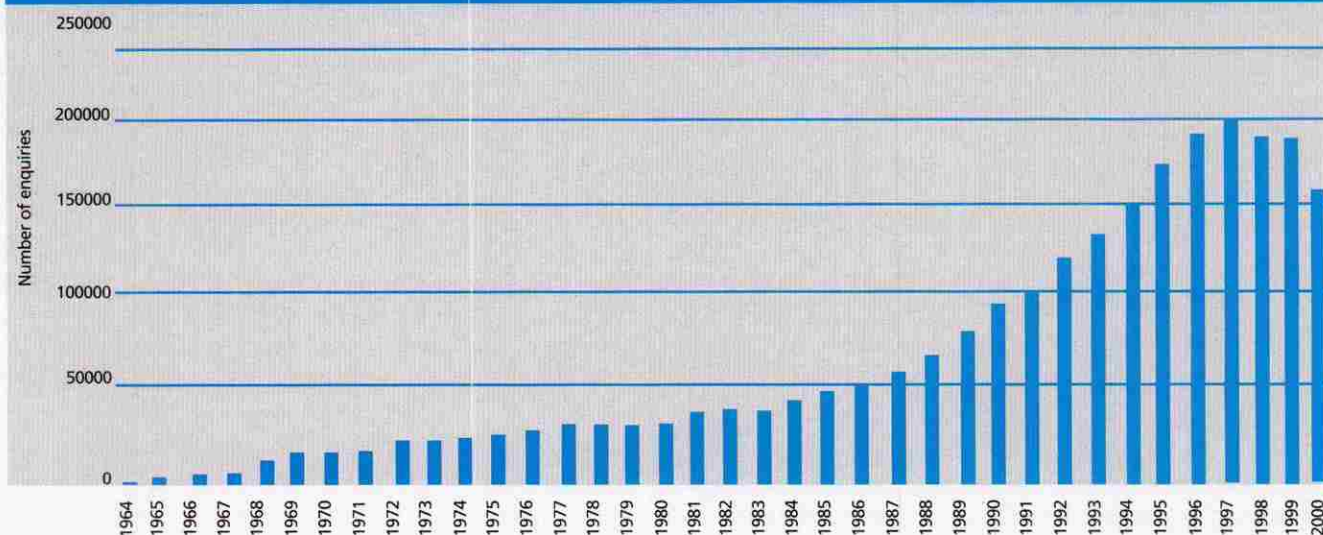
**NATIONAL DEMAND**

The total number of enquiries to the NPIS rose from 297,000 in 1999 to 360,000 in 2000, if you include TOXBASE hits as enquiries. However, there is a weakness in the TOXBASE data, as it is not possible to know why hits are made. For example, some enquiries are due to training programmes, rather than for the management of a case, but it seems likely that the increase, at least in part, is a real demand. In the same period, the number of enquiries to the voice services declined by 5.4 per cent.

The total number of telephone enquiries to the London centre has fallen from a peak of 200,000 in 1997 to 130,000 in 2001. Much of this enquiry load has been redistributed to the other centres providing a poisons information service for England (including therefore Cardiff).



Fig. 1. NPIS (London) enquiry load 1964-2000



## OUTREACH

Outreach is an important part of the NPIS service. London and other centres have conducted study days for nurses, A&E registrars and specialist academics events, such as study days on liver toxicity. There has been particular concentration on training of NHS Direct nursing staff because of their high use of poisons information services. As part of the outreach programme, NPIS (London) also produces a quarterly newsletter, *Poisons Quarterly*, which is sent to users within our deaneries. It is also available through the NPIS (London) website at [www.medtox.org.uk/npis/pdq.htm](http://www.medtox.org.uk/npis/pdq.htm). See Box 3 for more details of *Poisons Quarterly*. You can contact your local centre for information on their outreach programmes or to arrange staff training in your department.

The aim of these efforts is to increase the skill base of health professionals to enable them to assess and manage poisoned patients. The capping of demand for voice services could be seen as a success of these efforts. However, the number of staff receiving training has been small compared with the number of staff in A&E or NHS Direct (these being most likely to deal with suspected cases of poisoning).

## RESEARCH AND DEVELOPMENT

The deliberate, experimental poisoning of humans is not permitted in civilised circles and therefore the collection of poisoning data about self-harm or accidental poison-

ings is invaluable. We have for many years followed up a relatively small percentage of our enquiries to ascertain outcome or the effectiveness and practicalities of our advice and recommendations. This information is used in formulating new advice and information for our local and national database (TOXBASE). Your help in returning our follow up questionnaires is greatly appreciated. The growth in the use of TOXBASE does potentially undermine this effort and therefore, if you use TOXBASE and have case details, and the time, it would be appreciated if you could respond to any request for e-mailed details of cases.

In addition to the routine collection of case data, individual scientific and/or medical staff may seek information for special projects or to assess particular aspects of poisoning or its treatment, such as surveying the use of whole bowel irrigation as a means of gut decontamination in the poisoned patient. We can also undertake prospecting monitoring for manufacturers of new products, and are in a good position to undertake pharmacovigilance of new drugs.

These studies and research activities are provided to other health professionals and, with proper acknowledgement, can be used to support research papers and other projects; however we are, generally unable, through pressure of work, to help directly with student projects.



### Box 3. *Poisons Quarterly*

*Poisons Quarterly* is a newsletter intended to raise awareness of issues in toxicology. It is written and produced by the staff of the London Centre of the National Poisons Information Service [NPIS (L)] for medical and nursing staff in the A&E departments and minor injuries units allocated to be served by NPIS (L). As the name suggests, it is produced every three months.

*Poisons Quarterly* contains short articles, including case reports, about a variety of substances including those that:

- > NPIS (London) is frequently contacted about
- > Are difficult to treat
- > Are becoming more common in poisoning
- > Cause undue concern

### Box 4. Information to have at hand when telephoning

- > Name, age, sex and weight (in kg) of the patient(s)
- > Exact name of substance(s) to which patient exposed
- > For drugs: amount and dose exposed to
- > For products: constituents and manufacturer's name
- > Route of exposure and time since exposure
- > Clinical condition of patient, both at time of call and since exposure
- > Treatment already given
- > Any relevant pre-existing disease or past medical history
- > Patient's normal daily dose, if taking medication therapeutically

### REGIONS SERVED BY NPIS CENTRES

There are six poisons information services in the UK. The regions served by these NPIS centres are set out in Box 1. The areas covered by those centres serving England have been determined on the basis of the medical deanery boundaries. The funding of centres has moved towards a per-capita funding base, away from historic base lines. However, the total funding for NPIS has remained largely unchanged for several years with only occasional and limited inflationary uplifts. The total for England has remained at about £1.5 million for some years.

### SINGLE TELEPHONE NUMBER

To facilitate the regionalisation of the service the Department of Health has invested in a national, single telephone number for access to poisons information services. It became operative in February 2000. When this number is dialled the system should route the

call to the designated centre. Therefore if you dial this number from a hospital in north-east England you will be put through to the Newcastle centre. Similarly in the south-east, your call will go through to the London centre. Eventually direct access to a particular centre will not normally be possible, and all calls will have to be made using the single telephone number.

### GET THE BEST FROM YOUR LOCAL SERVICE

To make the best use of your local poisons information service and for us to be able to make a practical risk assessment we need certain information from you when you call (see Box 4). This includes information on the exposure (what, how much, how long ago) and the patient (age, body weight, clinical condition, relevant past medical history). To prevent delay it is very helpful to have this information to hand before you call us. We are able to give information on the constituents of products, potentially toxic doses of substances and make recommendations on the appropriate management of a particular patient (Box 5). The information we give is tailored to the individual enquiry.

You may find that in a subsequent enquiry the information given is different compared to the first enquiry. This may be because we have been given a different history or because the time since ingestion has changed and treatment advised on the first enquiry (such as gut decontamination) is no longer appropriate. If your department currently makes use of more than one poisons centre, it is important to note which one you have contacted so that you know which one to contact again if you require further advice for that case. Eventually this will not be an issue, as you will be routed through the single number to your designated centre. There are a number of areas we cannot advise on (Box 5). This includes drug interactions or adverse drug events, infectious diseases and food poisoning.

### CONCLUSION

The UK NPIS has undergone some marked changes in the last five years. The demand for information on poisoning continues to grow as it has since the service began in 1963. The development of electronic systems occurred early in the NPIS (in 1983)



### Box 5. What poisons information centres can and cannot do

#### Poisons information services can provide:

Information on principle constituents, clinical effects and management of exposures by ingestion, inhalation, injection and skin and eye contact for:

- Pharmaceuticals, drugs of abuse
- Chemical products in the home, industry and workplace
- Animal bites and stings
- Plants and fungi (if they have been identified)

General advice on management and an indication of possible constituents if the exact name of the product is unknown.

- > Location of hyperbaric oxygen centres
- > Identification of tablets and capsules by description and sometimes foreign drugs by name
- > Rarely used antivenoms and antidotes for emergency use

#### Poisons information centres cannot:

- > Identify plants and fungi over the phone
- > Advise on therapeutic adverse drug reactions
- > Provide information on vaccines
- > Provide information on the effects of drugs and chemicals in pregnancy and breastfeeding
- > Provide information on drug interactions and adjusting drug dosing post-overdose
- > Provide information on food poisoning
- > Provide information on infectious disease
- > Provide information on radiation exposure
- > Provide information on electrocution
- > Provide information on drowning

### References

- Bateman D *et al* (2002) TOXBASE: poisons information on the internet. *Emergency Medical Journal* 19, 1, 31-34.
- Goulding R, Watkin R (1965) National Poisons Information Service. *Monthly Bulletin of the Ministry of Health and Public Health Laboratory Service* 24, 26-32.
- Standing Medical Advisory Committee (1962) *Emergency Treatment in Hospital of Cases of Acute Poisoning. Report of the Sub-Committee.* London, HMSO

and they now provide a significant proportion of the provision of information to A&Es and other users. The voice services have changed with more enquiries going to centres outside of London. There is an agreed strategy to improve and standardise provision and a larger effort being made to provide outreach and training, although there is a long way to go with this and other aspects of the service.

Our user community has also changed in the five years since the 1997 review, most notably with the growth in NHS Direct and minor injuries units. Effectively, the UK has gained a public poisons information service in the last three years (as accessed through NHS Direct), which it had been denied since the early 1960s. Some of the changes outlined here are recent. The growth of Internet provision will accelerate, as will the demands on and from NHS Direct (and NHS

24 in Scotland). The number of products and drugs will continue to grow and the need to document and audit your procedures will increase.

Since 1963, the voice service has become part of the A&E culture. It remains to be seen how the remodelled service will work 'organically' within the NHS. However, the scientific, medical and nursing staff of the NPIS will continue to be here to advise and help, even at 2am on a Sunday morning when you can't quite make out the label on the bottle that the patient has just thrust into your hand.

#### Contact number

The single telephone number for poisons information in the UK is 0870 600 6266

